

Process Safety Leadership Group

Process Safety Leadership Group Final Report

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PSLG Development Process

- **Six Working Groups, addressing specific MIIB Recommendations:**
 - **WG1, Human Factors**
 - **WG2, Scope**
 - **WG3, Control and Instrumentation**
 - **WG4, Secondary and Tertiary Containment**
 - **WG5, Emergency Response**
 - **WG6, Mechanical Integrity**
- **Membership including representatives from Industry, Competent Authority, Trade Associations and Specialist Consultants**



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PSLG Report Scope and Application

- **Relevance to COMAH sites:**
 - **Focus on tanks storing petroleum**
 - **Other flammable liquids capable of giving rise to large vapour cloud**
 - **Other liquids falling within Containment Policy – especially in relation to secondary and tertiary containment**
 - **Good advice for other storage activities where relevant**



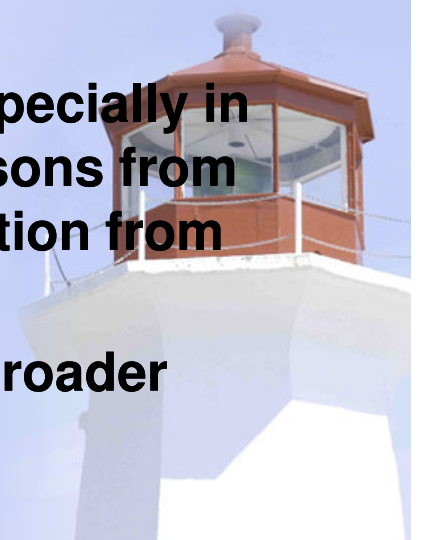
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PSLG Report Status

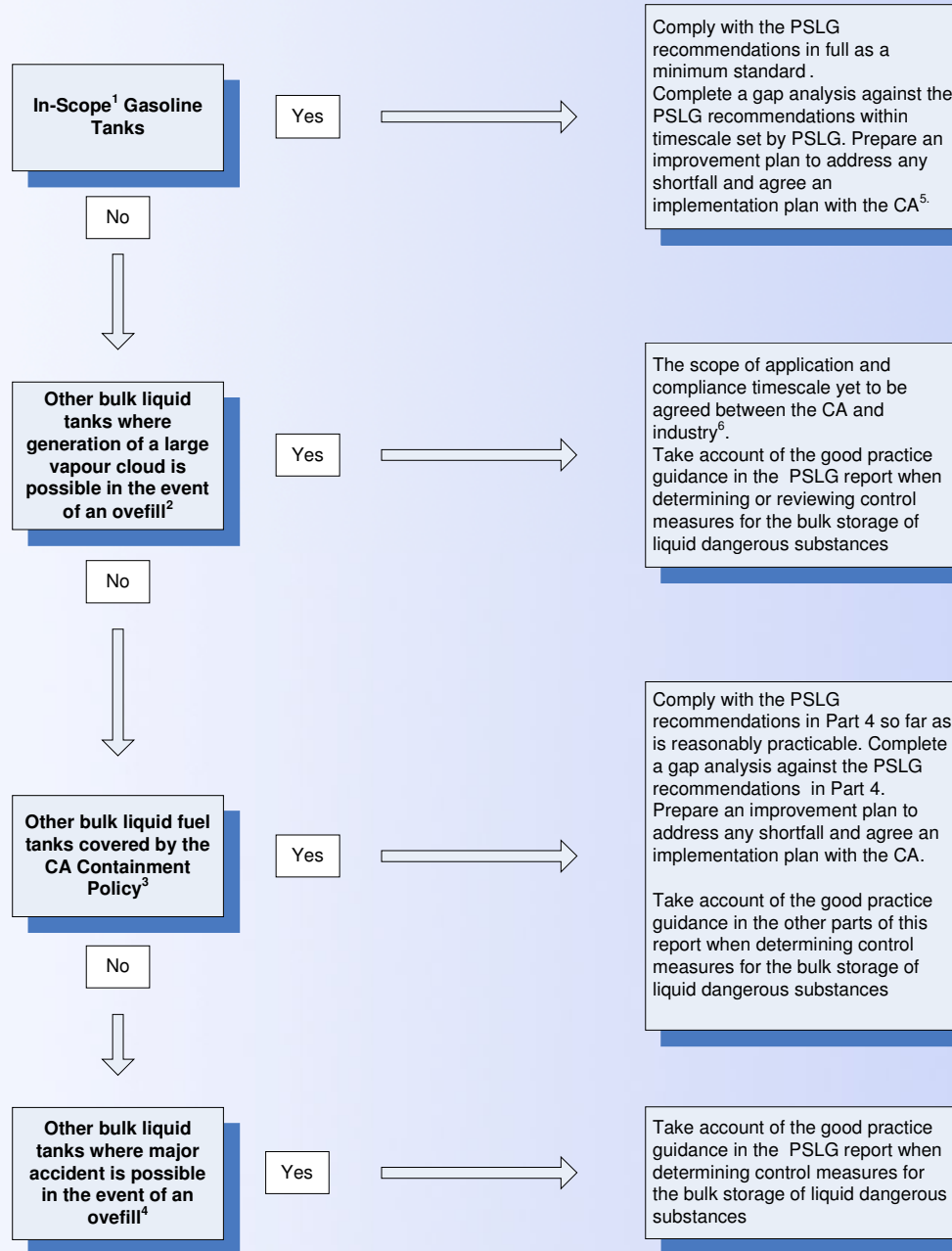
- **Not a new set of regulations or a code of practice**
- **Identification of good practice to meet COMAH Regulation 4**
- **Compliance should ensure risks associated with storage is ALARP**
- **Alternative measures may be taken**

But...

- **Considerable benefit to come to a collective view on good practice for tanks storage activities**
- **For storage of gasoline used to higher standards especially in relation to overfill protection – demonstrate that lessons from Buncefield have been learnt (Not changed the definition from the BSTG)**
- **Also for secondary containment – show that some broader lessons from other incidents also been acted upon**



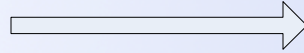
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In-Scope¹ Gasoline Tanks

Yes



Comply with the PSLG recommendations in full as a minimum standard. Complete a gap analysis against the PSLG recommendations within timescale set by PSLG. Prepare an improvement plan to address any shortfall and agree an implementation plan with the CA⁵.

No



Other bulk liquid tanks where generation of a large vapour cloud is possible in the event of an overfill²

Yes



The scope of application and compliance timescale yet to be agreed between the CA and industry⁶. Take account of the good practice guidance in the PSLG report when determining or reviewing control measures for the bulk storage of liquid dangerous substances

No



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Other bulk liquid fuel tanks covered by the CA Containment Policy³

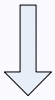
Yes



Comply with the PSLG recommendations in Part 4 so far as is reasonably practicable. Complete a gap analysis against the PSLG recommendations in Part 4. Prepare an improvement plan to address any shortfall and agree an implementation plan with the CA.

Take account of the good practice guidance in the other parts of this report when determining control measures for the bulk storage of liquid dangerous substances

No



Other bulk liquid tanks where major accident is possible in the event of an overfill⁴

Yes



Take account of the good practice guidance in the PSLG report when determining control measures for the bulk storage of liquid dangerous substances



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PSLG Report Implementation

- **Within six months of publication perform gap analysis**
- **Within nine months of publication agree implementation plan with Competent Authority**

But...

- **All Buncefield Standards Task Group work should have been completed – this implementation refers to new and any amended guidance only**
- **There are obvious priorities in the gap analysis and implementation plan i.e. Primary containment vs. Human Factors**
- **The CA understand the pressures – talk to them!**
- **Timescales for work are not set out in PSLG report – they are between you and the CA**



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PSLG Report Structure

- **Six Parts:**
 - **Part 1: Systematic assessment of safety integrity level requirements**
 - **Part 2: Protecting against loss of primary containment using high integrity systems**
 - **Part 3: Engineering against loss of primary containment**
 - **Part 4: Engineering against loss of secondary and tertiary containment**
 - **Part 5: Operating with high reliability organisations**
 - **Part 6: Delivering high performance through culture and leadership**
- **Addresses all 25 Recommendations from MIIB Design&Operations Report**
- **Supersedes BSTG Report issued in 2007**



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Part 1- Systematic Assessment of Safety Integrity Level Requirements

- **Determine SIL Requirements for Overfill Protection Systems**
 - Determine the SIL through appropriate risk assessment technique - LOPA, Risk Graph, Fault Tree
 - PSLG suggests LOPA, guidance provided in Appendix 2
 - Incorporating SIL assessments in COMAH reports



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Part 2 - Protecting Against Loss of Primary Containment

- **Automatic Overfill Protection Systems**
 - **Minimum SIL1 for Finished Gasoline Tanks agreed with TSA and UKPIA for Terminals**
 - **New systems fully compliant with BS EN 61511 for target SIL**
 - **Where existing equipment or systems are used, compliant with BS EN 61511 so far as reasonably practicable**
- **Using BS EN 61511 as guidance for functional safety management of the SIS, for example:**
 - **Safety Planning and Procedures**
 - **Operation, Maintenance, Inspection and Testing**
 - **Functional Safety Assessment and Audit**
 - **Management of Change**



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Part 3 - Engineering Against Loss of Primary Containment

- **DSEAR area classification review where appropriate**
- **Review the siting of emergency equipment (will access still be available?)**
- **Consider methods of improved leak detection for new or substantially modified facilities**
 - CCTV
 - Gas Detection
- **Review the mechanical integrity of tanks**
 - Preference for single bottomed tanks
 - EEMUA 159, API 653 represent good standards for tank integrity management



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Part 4 - Engineering Against Loss of Secondary and Tertiary Containment

- **Requirements are set out in:**
 - CA Containment Policy
 - Supporting guidance for containment policy (April 2008)
- **Further work under way to provide additional guidance for:**
 - Bund lining systems
 - Penetrating pipework
 - Waterstops and strapping
- **Expected for the final report published in December**



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Part 5 - Operating with High Reliability Organisations

- **Defining roles and responsibilities**
 - Does everyone know what they have to do and how?
- **Effective control room design & alarm management system design**
 - Can front of line staff reliably detect, diagnose and respond to potential incidents
- **Effective and safe communication (including inter site for pipeline transfers)**
- **Management of change**
- **Process safety performance indicators**
 - Note also the work of API RP 754, developing an international approach



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Part 6 - Delivering High Performance through Culture and Leadership

- **Principles for process safety leadership represents a commitment by industry leaders:**
 - Process safety leadership from board level
 - Engagement of the workforce
 - Monitoring of performance, and publication of performance information
 - Sharing best practice with other industry sectors
- **Process safety forum created to collectively review incidents and share lessons and good practice**
 - Tank Storage Association
 - UK Petroleum Industry Association
 - Chemical Industries Association
 - Oil and Gas UK
 - Nuclear Industry Association
 - Already sharing incident data and good practice (e.g. UKPIA MoC Tool)



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Open Forum

Questions?

